



Series 228A

7.2 x 6.8mm Illuminated Tactile Switch

- Surface mount gull-wing terminal and standard through hole configurations
- Compatible with IR reflow, and manual soldering
- Single color display during illumination
- Variety of LED color options
- Variety of cap styles, colors, and laser etching options



Ordering Information

| Series | Terminal Type | Actuating Direction | Actuation Force | LED Color | LED Type | Cap Style | Cap Color | Laser Etching | Packaging |
|--------|---------------|---------------------|-----------------|-----------|----------|-----------|-----------|---------------|-----------|
| 228A | M | V | A | R | F | A | MS | A | R |

| Code | Spec. |
|------|--|
| D | Standard through hole (black actuator) |
| M | Surface mount gull wing (black actuator) |

| Code | Spec. |
|------|---------------------------------|
| V | Vertical |
| *S1 | Side, with 4 pairs of terminals |
| *S2 | Side, with 3 pairs of terminals |

*S1 and S2 are only available with Cap Style. C, Flat LED, and through hole terminals

| Code | Spec. |
|--------|-------|
| F | Flat |
| *Blank | Bulb |

*Blank is only available for no cap, vertical through hole terminal with single color LED

| Code | Spec. |
|------|----------------|
| R | Red |
| Y | Yellow |
| G | Pure Green |
| B | Blue |
| W | White |
| A | Amber |
| RG | Red & Green |
| RB | Red & Blue |
| YG | Yellow & Green |
| RA | Red & Amber |
| AW | Amber & White |

| Code | Spec. |
|------|--------|
| A | 160 gf |

| Code | Spec. |
|-------|---|
| Blank | No Etching (only available on Natural color caps) See table on page.2 |
| Blank | No Cap See table on page 2 |
| Blank | No Cap See table on pages 2 - 4 |

| Code | Spec. |
|-------|--|
| R | Tape & reel packaging (only available for surface mount type) |
| Blank | Tray packaging (only available for standard through hole type) |

Note: Caps supplied in bulk for surface mount terminal constructions and must be installed after IR reflow soldering.

Cap Style

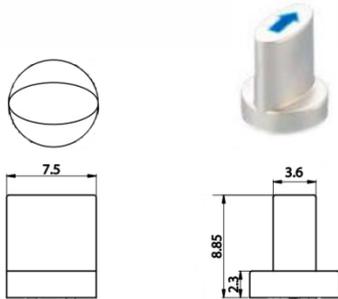
| Code | Spec. |
|------|--------------------------------|
| A | Elliptical column on round |
| B | 45° Elliptical column on round |
| C | Cylinder on 3/4 circle |

Cap Color

| Code | Cap Color |
|------|--------------|
| MS | Misty Silver |
| W | White |
| BB | Bright Black |
| R | Red |
| MB | Misty Black |
| A | Orange |
| N | Natural |

Cap Style Details

Style A: Elliptical column on round



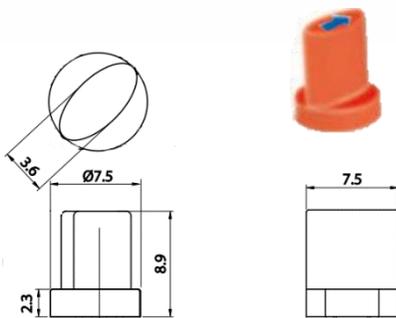
Ex. of Misty Silver

Cap with “↑” etching

Cap Etching

| Code | Style |
|------|-------|
| A | ⏻ |
| B | ○ |
| C | ↑ |
| D | OK |
| E | ⦿ |

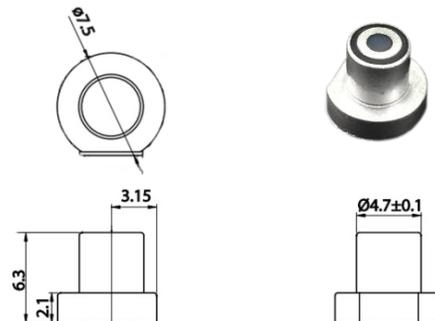
Style B: Elliptical column on round



Ex. of Orange

Cap with “↑” etching

Style C: Cylinder on 3/4 circle



Ex. of Misty Silver

Cap with “⦿” etching



Electrical Specifications

| Parameter | Conditions & Remarks | Min | Max | Unit |
|-----------------------|-----------------------------------|-----|----------------|-----------------|
| Contact Resistance | | | 100 | milliohms |
| Insulation Resistance | Between insulated terminals | 100 | | megohms |
| Dielectric Strength | 250 VAC between adjacent switches | | 1 | minute |
| Nonswitching Rating | | | 50 or 12 | mA or VDC |

Mechanical and Environmental

| | |
|-----------------------------|---|
| Soldering | Maximum reflow temperature, 260°C for 5 seconds Maximum manual temperature, 350°C for 3 seconds |
| RoHS | Lead-Free. Fully compliant to RoHS Directive 2011/65/EU |
| Operating Force | 160gf |
| Actuation Life | 100,000 cycles |
| Actuator Strength | 2 Kgf maximum |
| Travel | 0.25±0.1mm |
| Packaging | Standard tape and reel packaging for surface mount gull wing terminal Tray packaging for standard through hole |
| Operating Temperature Range | -25°C to +70°C |
| Storage Temperature Range | -30°C to +80°C |

Mechanical Specifications

Figure 1 – 228ADV..., Standard Though Hole, Vertical Actuation

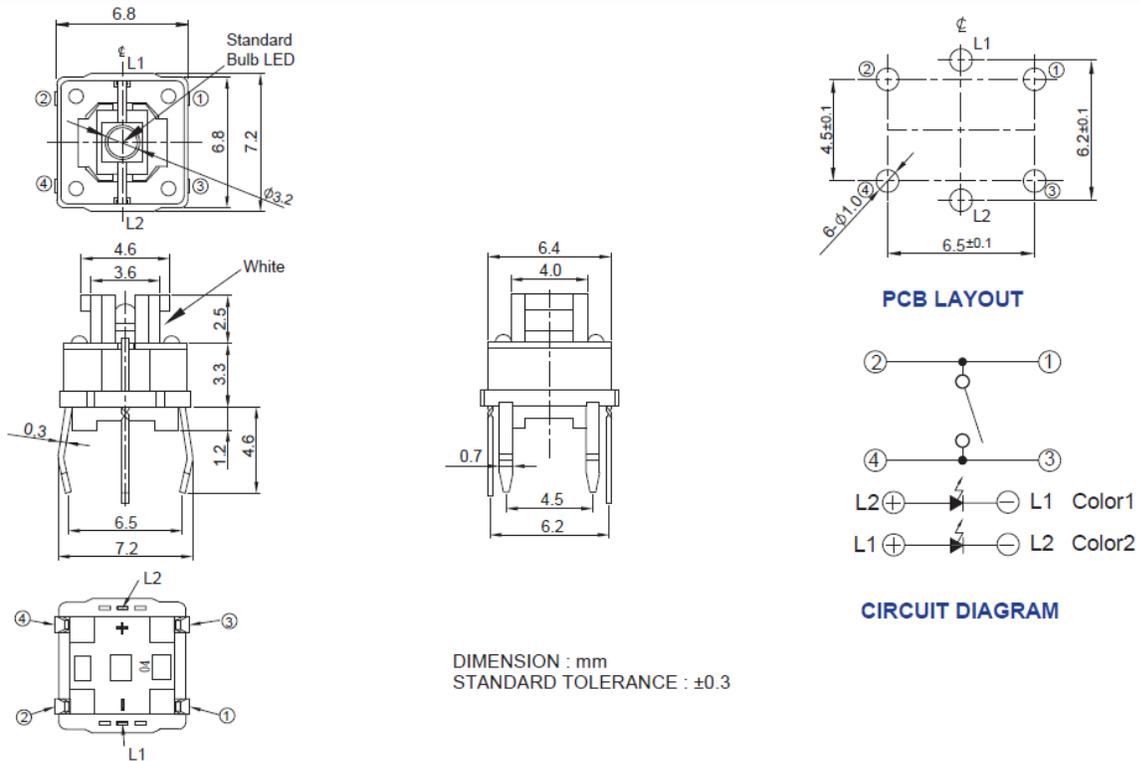


Figure 2 – 228AMV..., Surface Mount Gull Wing, Vertical Actuation

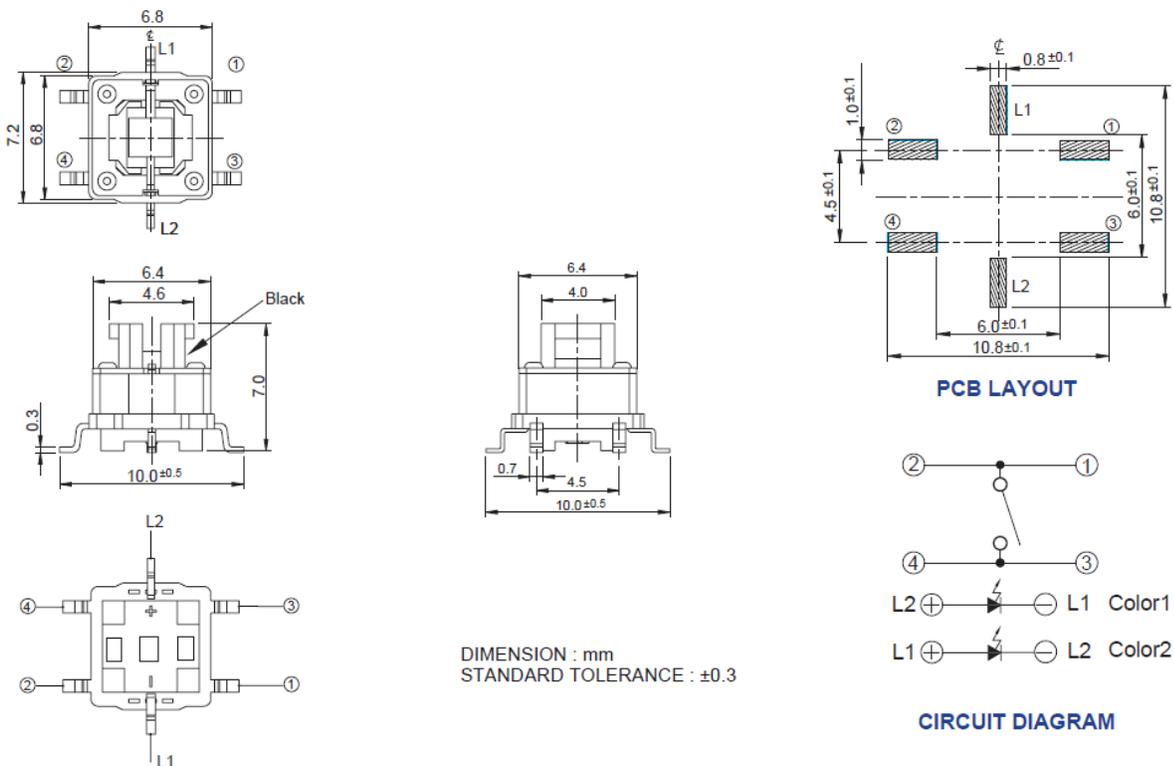


Figure 3 – 228ADS1..., Standard Though Hole, Side Actuation, 4 Pairs Terminals

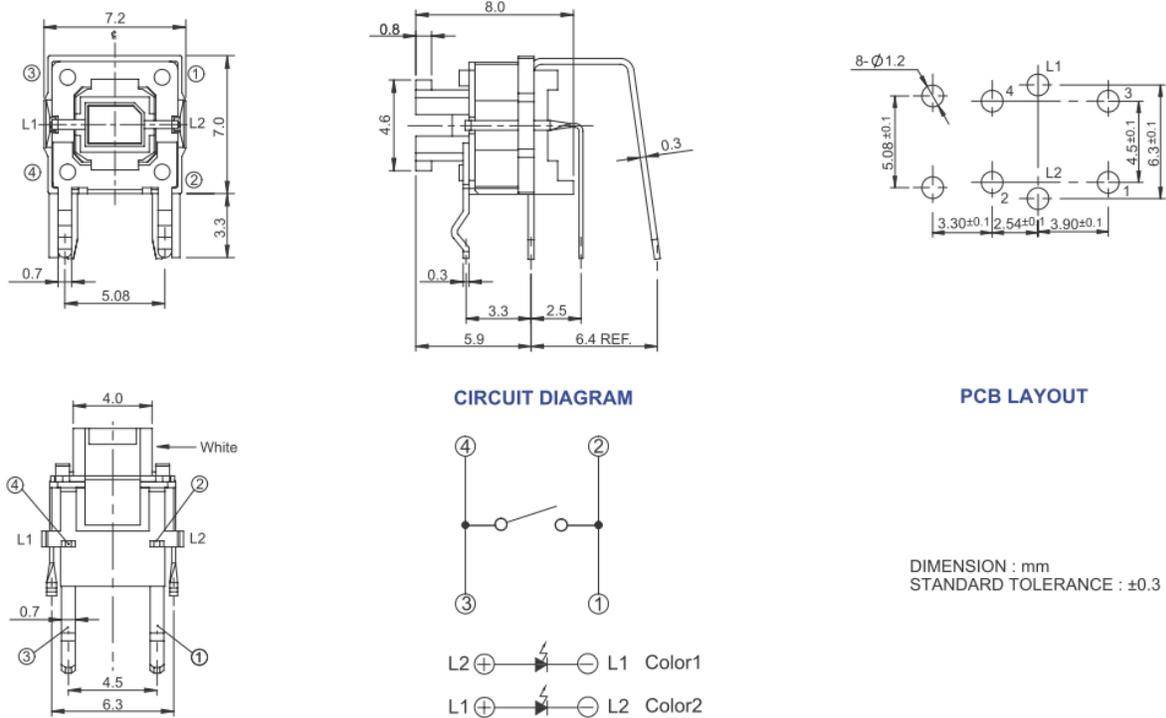


Figure 4 – 228ADVA...A..., Standard Though Hole, Vertical Actuation, Elliptical Column on Round Cap in Natural Color

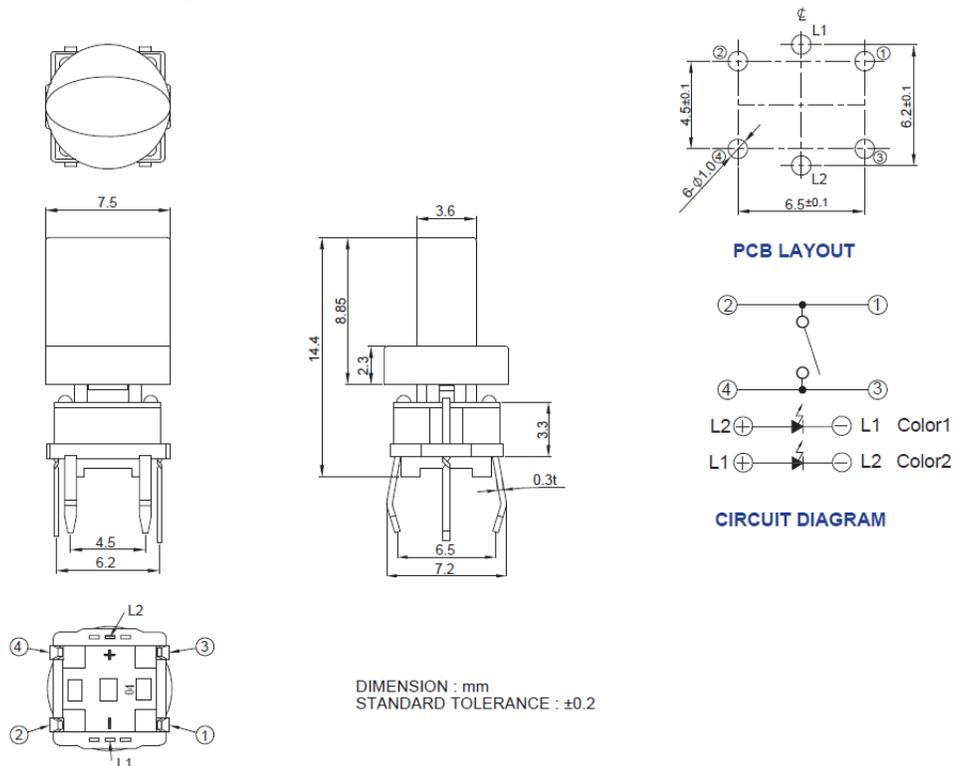
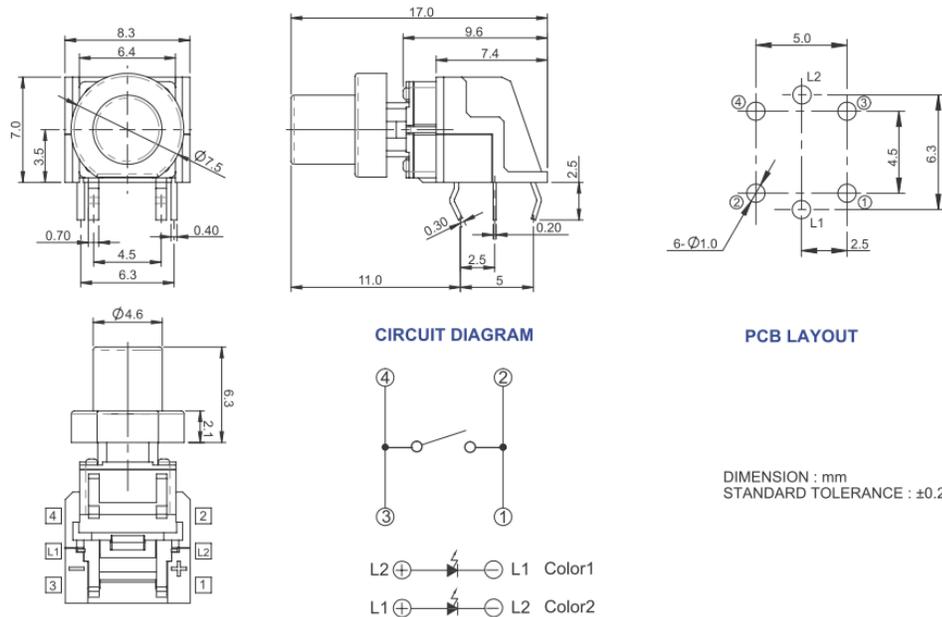


Figure 5 – 228ADS2...C..., Standard Though Hole, Side Actuation with 3 Pairs Terminals, & Cylinder on Round Cap

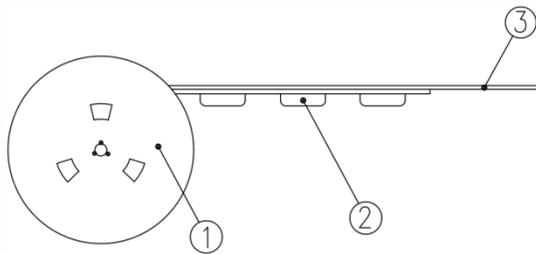


Packing: Tape and Reel

Surface Mount Gull Wing, Actuator Height 7.0mm

The packing specifications:

1. Structure and materials:



| No | PART NAME | MATERIAL |
|----|--------------|-------------|
| ① | REEL | POLYSTYRENE |
| ② | CARRIER TAPE | POLYSTYRENE |
| ③ | COVER TAPE | POLYESTER |

2. Packing quantity: 450 pcs/reel
3. More than 15 empty pockets should remain at each end of the carrier tape for each reel.
4. Shortage of less than 10 pcs a reel is acceptable but no more than 3 consecutive empty pockets are allowed.
5. Stripping strength of cover tape is between 10 gf to 130 gf and stripping angle should be within 165°~180°.
6. The product in the pocket of carrier tape should be placed in a specified correct position.
7. Tape and reel per EIA-481.
8. Dimensions:

